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Original Article

Evaluation of Quality of Life in Nasopharyngeal Carcinoma based on EORTC QLQ-H and N35 and Karnofsky Scale in Adam Malik General Hospital Medan

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Abstract

Introduction: Nasopharyngeal carcinoma (NPC) is a malignant epithelial cell that lines the nasopharyngeal surface and is a neck head malignancy that has received much attention due to the relatively high mortality rate. Evaluating the quality of life for patients with malignancies is important as an "end-point" for treatment and an indicator of patient monitors.

Method: This study is an analytical study with cross-sectional research design by analyzing the EORTC QLQ-H and N35 and Karnofsky Scale on 60 NPC patients.

Results: Most NPC patients were male, most in Stages III and IV. The most histopathological type is non crystallizing SCC. Based on EORTC QLQ-H and N35, the most complaints of patients with NPC were found to be weight loss and the use of painkillers Karnofsky scores of NPC patients who were assessed as having a mean of 70.33.

Conclusion: There is a significant correlation between EORTC QLQ - H and N35 with Karnofsky scores ($r = -0.612$; $P = 0.000$). The greater the Karnofsky value, the smaller the value of EORTC QLQ - H and N35 means that the quality of life of the patient is getting better, and vice versa

Key words: EORTC QLQ-H and N35, Karnofsky scale quality of life, Nasopharyngeal carcinoma

INTRODUCTION

Nasopharyngeal carcinoma (NPC) is an epithelial cell malignancy on the nasopharyngeal surface and is one of the neck head malignancies that have received much attention due to high mortality rate.[1] The highest incidence in the world is in the Southeast China Province, which is 40–50 cases of NPC between 100,000 population.[2] In RSUP H. Adam Malik Medan in 1998–2000, there were 130 patients with NPC from 1370 new patients on head and neck oncology.[3]

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Evaluation of quality of life in patients with malignancy is important in the field of oncology but depends on the type of malignancy and stage, because some types of malignancy do not provide symptoms until the advanced stage. Quality of life has been introduced as an "end-point" for treatment and is an early indicator of disease progression that can help monitor patients.[4]

According to Taher, with research on 87 head and neck malignancy patients with histopathology of squamous cell carcinoma, treatment modalities have a significant negative affect on the quality of life. Tumor location, clinical stage, treatment modality, sex, age, and smoking habits had a statistically significant impact on quality of life at the end of the treatment period. It has the worst impact on taste and smell sensation, weight loss, dry mouth, thick retention of saliva, pain, loss of appetite, nausea and vomiting, and fatigue.[5]

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EORTC QLQ-H and N35 have a symptom scale both in multiple and single items, and there are, still, no data that adequately support whether the use of EORTC QLQ-H and N35 alone is valid and reliable enough to be used in NPC patients who get various types of treatment modalities; thus, the researchers interested in analyzing the correlation between EORTC QLQ-H and N35 parameters and Karnofsky Scale and the suitability of the scores between the two questionnaires in assessing the quality of life for NPC patients to determine whether overall quality of life of NPC patients can be assessed with far better results when using multidimensional parameters with EORTC QLQ-H and N35 combined with Karnofsky Scale.

METHOD

This study is an analytical study with a cross-sectional research design. The study was conducted at H. Adam Malik General Hospital in Medan. It was conducted from August 2017 to March 2018. The population of this study were all NPC patients who were outpatient or hospitalized at H. Adam Malik Hospital Medan. The samples of this study were NPC patients who were just going to undergo therapy, NPC patients on therapy, and NPC patients who had undergone therapy at H. Adam Malik General Hospital Medan. Inclusion criteria: NPC patients with complete medical records containing all data needed and willing to fill out the EORTC QLQ-H and N35 and Karnofsky Scale questionnaires. Exclusion criteria: The questionnaire was not filled in completely and uncooperative samples and had severe comorbidities that were not associated with NPC.

The data obtained were analyzed statistically to analyze the EORTC QLQ-H and N35 and Karnofsky Scale correlations in assessing the quality of life of NPC patients in H. Adam Malik Hospital Medan. Data collected and analyzed with a computer program and present ontable.

RESULTS

This study was conducted on 60 NPC patients who came to RSUP H. Adam Malik Medan from July to December 2017. The subjects were all NPC patients who had not, were or had undergone chemoradiotherapy who met the inclusion and exclusion criteria of the study.

NPC patients increased from age groups of the third decade and peaked in fifth decade. The mean age is 43.02 ± 13.385 years (mean ± SB). In this study, the youngest NPC patient was 18 years, and the oldest was 73 years.

The majority of NPC patients were male (80%), with 20% being female. In this study, the highest number of patients was found in Stage IVB as many as 29 people (48.3%) followed by Stage III with 13 people (21.6%). The histopathological type in 46 patients (76.7%) found to be nonkeratinizing SCC followed by undifferentiated types with 11 patients (18.3%) and SCC keratinizing types with 3 patients (5.0%).

The assessment of the quality of life of NPC patients was carried out in patients undergoing chemoradiotherapy totaling 35 patients (58.3%), the remaining 15 were patients who had not undergone chemoradiotherapy (25%) and in patients who had undergone chemoradiotherapy as many as 10 patients (16.7%).

Assessment of the quality of life-based on EORTC QLQ-H and N35 with various types of symptoms as noted above, the most common problem of NPC patients were weight loss and painkillers obtained Karnofsky scores in NPC patients with a mean of 70.33 ± 14.258 (mean ± SB).

DISCUSSION

In Indonesia, NPC is the 4th most malignancy after breast cancer, cervical cancer, and lung cancer[1]. Based on official data from the Ministry of Health, the prevalence of nasopharyngeal cancer patients in Indonesia is 4.7 people per 100,000 population a year.[6] In RSUP H. Adam Malik Medan in 1998–2000, there were 130 patients with NPC from 1370 new patients on head and neck oncology.[3]

In this study, we found NPC patients increased from the age group in the third decade and peaked in the fifth decade. The average age is 43.02 ± 13.385 years (mean ± SB). The highest number of patients with NPC in the age group ≥50 years is 21 (35.0%) and at least in the age group ≤20 years is 3 (5.0%), with the youngest age is 18 years, and the oldest is 73 years.

Nearly 60% of NPC patients aged between 25 and 60 years.[7] In endemic areas, the incidence increases since the age of 20 years and reaches a peak in the fourth decade and decade five.[8]

Research at H. Adam Malik General Hospital in Medan with a series of cases by Lutan received the highest incidence at 40–49 years old by 40% from 130 cases,[3] another Puspita study (2011) had the highest incidence in the age group 51–60 years as much as 26.5% of 335 cases and the highest frequency of histopathological type was squamous cell without creatinization 46.6%.[9]

In this study, we found that most NPC patients were men 48 (80%), and the rest were women 12 (20%), the results of this study were not too different from the results of

previous studies in Yogyakarta and at RSCM Jakarta with a ratio of 4, 5: 1, and 4.7: 1.[10]

From a worldwide survey conducted in 2012, there were 87,000 new cases of NPC appearing annually. 61,000 new cases were found in men and 26,000 new cases in women.[11]

Men who suffer more from NPC compared to women are reported in almost all studies; this is thought to have something to do with living habits and work that causes men to come in contact with carcinogens that cause NPC. Steam exposure, dust smoke, and chemical gas in the workplace increase the risk of KNF 2–6 times, while exposure to formaldehyde in the workplace increases risk 2–4 times. In addition, the dominant hormone testosterone in men is suspected of causing a decrease in the immune response and surveillance of tumors so that men are more susceptible to EBV infection and cancer.[12]

In this study, the most patients with NPC were found in Stages III and IV. In Indonesia, when diagnosed the patient is usually at an advanced stage, only 10% of cases are diagnosed at an early stage.[13]

Clinical diagnosis of KNF is difficult because the location of the nasopharynx is hidden, so most diseases have developed into advanced stages where the size and lymph nodes are large enough to be found.[14] Patients who come for treatment at RSUD Dr. Saiful Anwar were found at 0.81% (Stage I), 4.88% (Stage II), 38.21% (Stage III), and 56.10% in Stage IV.[15]

In our study, the most common histopathological type in NPC patients was non-crinizing SCC (76.7%) followed by undifferentiated type (18.3%) and keratinizing SCC type (5.0%). Different from the research conducted by Kurniawati *et al*., it was reported that the type of undifferentiated NPC histopathology was 70.8%, non-creatinizing type was 29.2%, and keratinizing type was 0%.[16]

In some studies found that the WHO Type 3 is the most common type in Southeast Asia.[17] In the WHO Type 2 and 3 KNF, high Epstein Barr virus (VEB) titers were encountered, while Type 1 did not have a relationship with VEB titers. The WHO Type 1 KNF is predominantly found in Caucasian ethnicities as in Europe.[18] From the results of these studies, there was a difference in the dominance of histopathological types in each study in different locations. Differences in geographical and racial/ethnic distribution on KNF in the world suggest that environmental and genetic factors may play a role in this difference.[7]

In this study, an assessment of the quality of life of NPC patients was carried out in patients undergoing chemoradiotherapy (58.3%), the remaining 25% in patients who had not undergone chemoradiotherapy and in patients who had undergone chemoradiotherapy as much as 16.7%.

In Indonesia so far one study has been reported on the quality of life in HNC sufferers (before, moderate, or after therapy), and two studies on the quality of life of NPC patients. Research using EORTC QLQ-H and N35 in NPC patients before therapy showed a poor quality of life (64.7%). However, the assessment of the quality of life of patients after therapy has never been reported.[15] The quality of life of NPC patients is not only based on tumor stage or size but also based on chemotherapy treatment and radiotherapy.

From the assessment of the quality of life-based on EORTC QLQ-H and N35 with various types of symptoms in this study, the complaints of the most NPC patients were found to be weight loss and use of painkillers. In addition, in this study obtained Karnofsky scores in NPC patients who assessed their quality of life with a mean of 70.33 ± 14.258 (mean ± SB). In this study, it was found that many patients with Stage IV who had spread to the cranii base which caused the most common symptoms were headache, so that explain the use of painkillers.

The assessment of the quality of life of cancer patients is considered necessary because with the assessment of the quality of life of these patients can be used as a parameter to assess the quality of cancer therapy in patients. To measure the quality of life should be multidimensional involving physical, social, and emotional aspects such as EORTC QLQ H and N35, which is a questionnaire specifically intended for patients with head and neck malignancies.[19]

EORTC QLQ H and N35 is a specific module intended for head-neck cancer patients. Consists of 35 questions, which can be grouped into seven multi-item scales and 11 single item scales. The interpretation of the scale produced is 0–100 where the function scale 100 explains that the better the quality of life. While the scale of the symptoms, the higher the number obtained, the more perceived burden.[20]

It was reported that in patients with head and neck malignancies, the more age and tumor stage increases, the lower the physical status/Karnofsky Performance Scale.[21]

In this study, the subjects who had not undergone therapy were as many as 15 people, it appears that only 10 components of the EORTC QLQ H and N 35 assessment have a significant correlation with the Karnovsky score and all with a negative direction. The assessment component of EORTC QLQ H and N 35 which has a strong correlation

with Karnofsky score is pain, troubles with social eating, opening mouth, and dry mouth, according to research. Patients with nasopharyngeal tumors have the worst functional and social values compared the other group, had the highest pain score and dry mouth complaints before therapy.[22]

In this study, there were 15 patients who had not undergone chemotherapy; there were 1 Stage III patient, 2 Stage IVa patients, and as many as 12 people with Stage IVb. The Karnofsky score correlation with each component of the EORTC variable can only be performed on patients/subjects with Stage IVb, symptoms, opening mouth pain, dry mouth, weight loss, and trouble with social eating. According to research stated that the appearance of symptoms and the severity of the stage of the disease and its associated Karnofsky scale and thick salivary disorders, use of painkillers, weight loss, especially found in pharyngeal tumors.[23,24]

The difficulty of protecting important structures around the nasopharynx causes toxicity due to radiochemotherapy is difficult to avoid, especially due to conventional two-dimensional radiation therapy. The main toxicity of radiotherapy is xerostomia, trismus, dysphagia, and hearing loss. This toxicity will limit the physical function of the patient and trigger the development of psychological problems, such as anxiety, fear, depression, and depression which will affect the quality of life of patients. The quality of life is also significantly affected by the time of evaluation after therapy, age, and socioeconomic status of the patient.[15]

In this study, we found a significant correlation (P= 0.000, P <0.05) between EORTC QLQ-H and N35 with Karnofsky scores, with a correlation relationship that was inversely proportional (r = −0.612). This means that the greater the value of Karnofsky scores, the smaller the value of EORTC QLQ-H and N35 (the quality of life of patients is getting better), and vice versa.

There is a match between Karnofsky scale score and EORTC QLQ-H and N35 score in assessing the quality of life of patients with NPC (Awad, *et al*., 2008) where there is a significant correlation between the three parameters. The lower the EORTC QLQ-H and N35 score, the better the quality of life. EORTC QLQ-H and N35 scores can also estimate Karnofsky PS scores, with the standard value of EORTC QLQ-H and N35 score errors smaller than EORTC QLQ-C30 scores, so EORTC QLQ-H and N35 are more sensitive to estimating them.[25]

Based on this, it can be interpreted that the higher the score of the Karnofsky score, the better the quality of life, the lower the EORTC QLQ H and N35 score, the better the quality of life.

Thus, the hypothesis of this study is that there is a correlation between the assessment of the quality of life of KNF sufferers using EORTC QLQ-H and N35 and Karnofsky scores revealed.

CONCLUSION

In this study, there was an increase in the number of NPC patients from the age of the third decade, with a mean age of 43.02 ± 13.385 years (mean ± SB). The youngest age is 18 years and the oldest is 73 years. In this study, the most NPC patients were men. In this study, the most patients with NPC were found in Stage III and IV. In the study, the highest histopathological type was found to be non-crinizing SCC (76.7%).

In this study, an assessment of the quality of life of NPC patients was performed in patients who were undergoing chemoradiotherapy as much as 58.3%, in patients who had not undergone chemoradiotherapy as much as 25% and in patients who had undergone chemoradiotherapy as much as 16.7%. From the assessment of the quality of life-based on EORTC QLQ-H and N35 with various types of symptom in this study, the complaints of most NPC patients were found to be weight loss and painkillers. In this study, the score of Karnofsky scores of NPC patients was found to be an average of 70.33 ± 14.258 (mean ± SB).

There is a significant correlation between EORTC QLQ-H and N35 with Karnofsky scores (r = −0.612; P = 0.000). The greater the value of Karnofsky scores, the smaller the value of EORTC QLQ-H and N35 means that the quality of life of the patient is getting better, and vice versa.

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